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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,315	06/27/2007	Lawrence C. Kennedy	032968-0134	2098

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EXAMINER

DODD, RYAN P

ART UNIT	PAPER NUMBER
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3655

MAIL DATE	DELIVERY MODE
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08/11/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,315	Applicant(s) KENNEDY ET AL.	
	Examiner RYAN DODD	Art Unit 3655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 June 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9,49-54 and 72 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9,49-54 and 72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Drafts, Person's Patent Drawing, Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This action is in response to the amendment received 7 June 2011. Amendments to the Claims, along with Remarks have been received, entered, and are being considered by Examiner. The amendments to the drawings and specification have not been entered, because the Office deems these additions new matter. Claims 1-9, 49-54, 62-65, and 72 are currently pending, with claims 62-65 being withdrawn from consideration. Therefore **claims 1-9, 49-54, and 72 are** currently being considered.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7 June 2011 has been entered.

Response to Amendment

Applicant's amendment to the drawings and specification has not been entered. Specifically, the Office is of the position that the new Fig. 23 does not exhibit a "W-W shaped profile" as presently understood, because a "W" has pointed edges, whereas

Fig. 23 appears to show two profiles substantially in the shape of a W, albeit with rounded edges.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation “W-W shaped profile” of claim 51 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9, 49-54, and 72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, lines 7-8 recite the limitation: “wherein the grooved portion which forms the W-shaped profile is formed by a single piece”. **Claim 2**, lines 12-13, recites something similar. To say that the grooved portion, which is defined as distinct from the first and second portions of the rotor, is formed by a single piece is misleading. The grooved portion of the present Application looks to be monolithically formed from the same material as the rotor. Thus, to say that the grooved portion is formed by a single piece implies that it is formed by a single piece different from that of the rotor, which is not the case. These limitations are therefore indefinite. **Claims 49 and 52** have a similar issues.

Claim 2, line 8 recites the limitation: “rotor ring”. There is insufficient antecedent basis for this limitation in the claims.

Claim 51 recites the limitation: “wherein the grooved portion of the rotor further has a W-W shaped profile.” This limitation is uncertain because Examiner is not sure what a W-W shaped profile would look like. For instance, would the two W’s be side by

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side? The only place where it is mentioned in Applicant's specification, paragraph 54, does not distinguish what such a profile might look like.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-9, 49-54, and 72 are rejected under 35 U.S.C. 112, first paragraph.

As to **claims 1 and 2**, the specification, while being enabling for a rotor with a first portion, and second portion, and a grooved portion, does not reasonably provide enablement for a grooved portion formed by a single piece that is apart from the first and second portions, because the grooved portion is formed of the same material, and thus from the same piece, as the first and second portions, as recited in claim 1, lines 7-8, and claim 2, lines 12-13. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims, if claims 1 and 2 are to be interpreted as reciting a grooved portion formed of a separate piece than that of the first and second portions.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

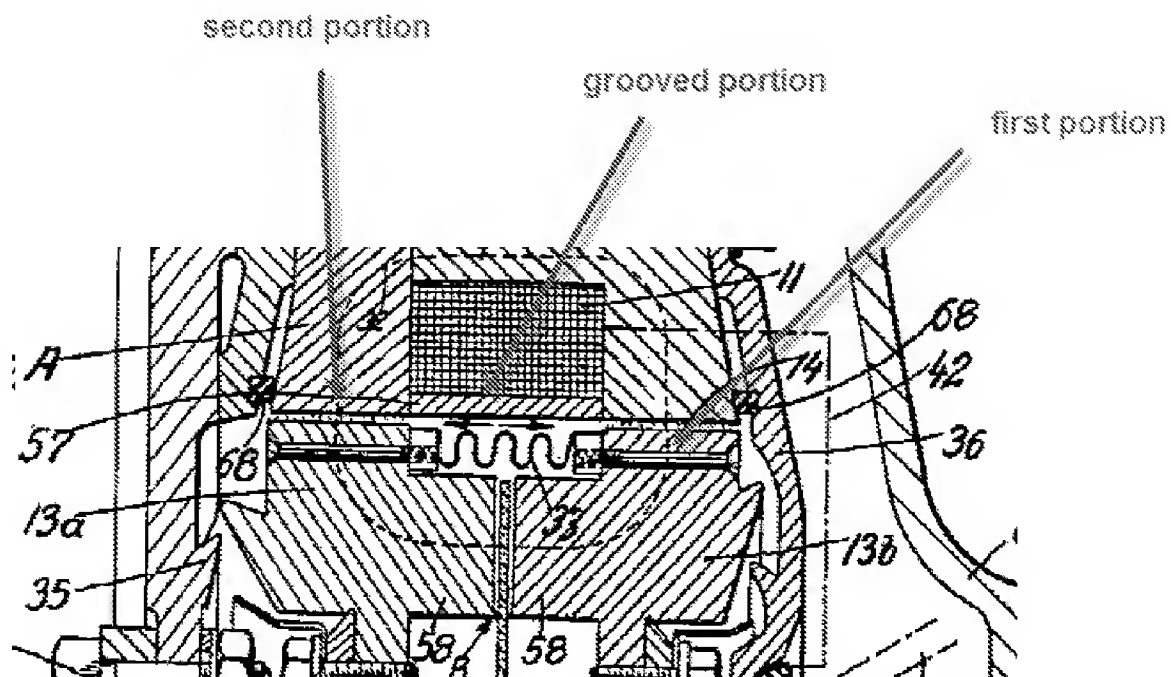
Claims 1-2, 4-6, 49-52, 54, and 72 are rejected under 35 U.S.C. 102(b) as being anticipated by newly cited US Patent to Forster 2921658 (henceforth Forster '658).

Forster '658 discloses, referring to Fig. 2, a viscous fluid clutch for use in a vehicle (column 1, line 18) comprising:

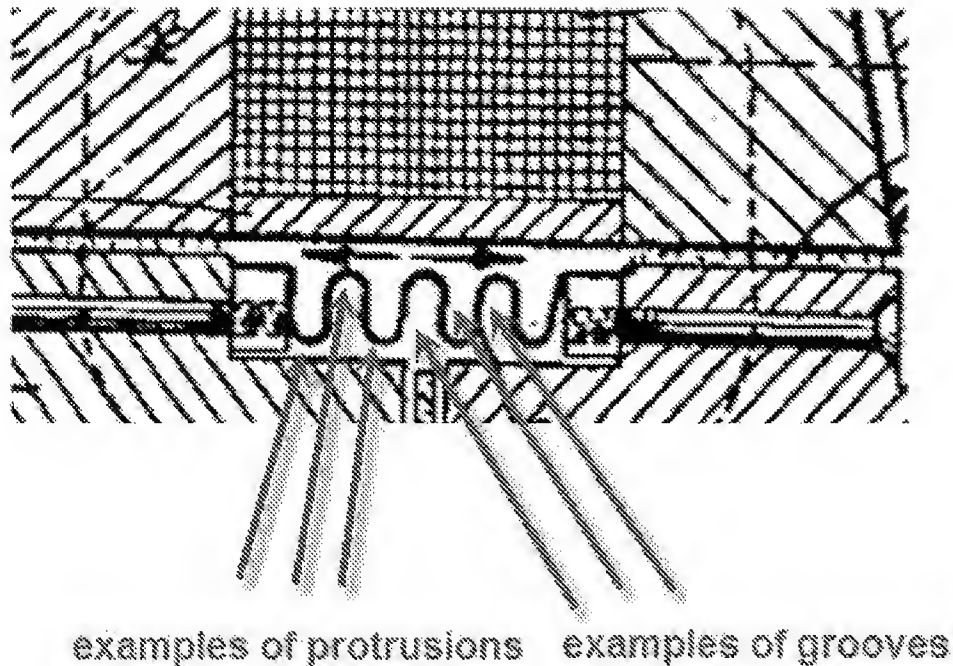
- a rotor (driven member 13) having a rotor hub (32 or hub members 30a,b) driven by an input shaft (shaft 17) and a rotor surface (facing gap 14) having an end connected to an outer periphery of the rotor hub (via rings 13a,b),
- the rotor surface including: a first portion; a second portion; and a grooved portion disposed between the first and second portions (See Fig. 2 and Fig. below);
- wherein the grooved portion forms a W-shaped profile, wherein a portion of the grooved portion which forms the W-shaped profile is formed by a single piece (springs 33 are formed by a single piece and are in the shape of multiple cursive W's);
- wherein the first and second portions of the rotor each have a thickness sufficiently greater than a thickness of the grooved portion such that a magnetic flux path in the fluid clutch will have a substantial portion of a magnetic field flow around the grooved portion as compared to a portion of the magnetic field flow that flows through the grooved portion. (See Fig. 2, dotted line, see also column 4, lines 71-72)

As to claims 2 and 52, Forster '658 discloses a magnetorheological fluid clutch, comprising:

- an input shaft (shaft 17);
- a coil assembly (electrical coil 11) for generating a magnetic field;
- a housing comprising a stator (annular member 12); and
- a rotor (driven member 13) disposed in the housing;
- wherein the rotor includes a radially extending hub (32 or 30a,b) driven by the input shaft and an annular rotor ring (13a,b) connected to the hub; and
- wherein the rotor ring includes a first portion, a second portion, and a portion of reduced thickness (see Fig. 2 and figure below) disposed between the first and second portions to prevent a shunt in the magnetic field,
- wherein the rotor includes a grooved portion (springs 33) which forms a W-shaped profile at the portion of reduced thickness, wherein the grooved portion which forms the W-shaped profile is formed by a single piece.



As to **claims 4 and 5**, Forster '658 discloses: wherein the portion of reduced thickness is formed to include grooves and protrusions (see figure below), which form the W shaped profile.



As to claim 6 and 54, in accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Please note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e. the portion of reduced thickness, does not depend on its method of production, i.e. formed without cutting. *In re Thorpe*, 227 USPQ 964, 966 (Federal Circuit 1985).

As to **claims 49 (and 53)** Forster '658 discloses the fluid clutch and its elements but does not disclose a "roll-formed portion". However, in accordance to MPEP 2113, the method of forming the device is not germane to the issue of patentability of the

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device itself. Therefore, this limitation has not been given patentable weight. Please note that even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product, i.e. the portion of reduced thickness, does not depend on its method of production, i.e. formed without cutting. ***In re Thorpe, 227 USPQ 964, 966 (Federal Circuit 1985).***

As to **claim 50**, Forster '658 discloses a saw tooth shaped profile (saw teeth may have rounded edges).

As to **claim 51**, Forster '658 discloses a W-W shaped profile because it exhibits multiple cursive-shaped "W's".

As to **claim 72**, the grooved portion of Forster '658 has an inner surface and an outer surface, which are part of the rotor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 7-8 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forster '658 alone.

As to **claims 3 and 53**, Forster '658 the magnetorheological fluid clutch of claim 2 but **does not disclose** wherein the thickness of the first portion and the thickness of the second portion are at least seven times greater than the thickness of the portion of reduced thickness. However, It would have been obvious to one having ordinary skill in the art at the time the invention was made to reduce the thickness of the portion of reduced thickness to a very small amount, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

As to **Claims 7-8**, Forster '658 discloses the magnetorheological fluid clutch of claim 2, but does not specify what type of metal its rotor ring is comprised of. However, it would have been obvious to one having ordinary skill in the art to form the rotor ring of either a ferrous or non-ferrous material. One skilled in the art would recognize the effects of using ferrous metals so close to a magnet on the rotating device. Thus, choosing the type of metal with which to form would be merely a matter of choice of design.

Claims 1-9, 49-54, and 72 are alternatively rejected under 35 U.S.C. 103(a) as being unpatentable over Moser '177 in view of Forster '658.

For instance, Moser '177 discloses a fluid clutch and **fan drive assembly (claim 9)** very similar to that of the present application. Its portion of reduced thickness is very thin, but is not formed in the shape of a "W". However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to reduce the

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thickness of a portion of the rotor, as is known from Moser '177 and form it in the shape of a "W", as is known from Forster '658, in order to solve the same problem addressed in Moser '177 and alluded to in Forster '658 by the designation of the flux path by a dotted line-x in Fig. 2.

Response to Arguments

Applicant's arguments with respect to claims **1-9, 49-54, and 72** are have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN DODD whose telephone number is (571)270-1161. The examiner can normally be reached on Monday thru Friday, 9:00A-6:30P, with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Le can be reached on (571)272-7092. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ryan Dodd/

/DAVID D. LE/

Supervisory Patent Examiner, Art Unit 3655

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